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This study reports the subsequent achievement of junior college students taking guided studies courses. Relationships between ACT scores, grades earned in guided studies courses, and subsequent success in college courses were examined. English 101, Communications 131, and Social Science 131 were selected as criterion courses, but the lack of adequate criterion measures made it difficult to draw firm conclusions. With certain courses, a relationship exists between grades earned in guided studies courses, ACT scores, and subsequent success in college. The salvage rate for guided studies courses appears to be low. This study suggests the need for specifically defined course goals, evaluation in terms of these goals, and replication of this study. (JC)

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DALLAS COUNTY JUNIOR COLLEGE DISTRICT

RESEARCH STUDY 68 - 4

A STUDY OF THE SUBSEQUENT EDUCATIONAL ACHIEVEMENT OF STUDENTS TAKING GUIDED STUDIES COURSES

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INFORMATION

The following guided studies courses were examined in this study:

Guided Studies Reading 090
Guided Studies Writing 090
Guided Studies Math 090
Guided Studies Math 091
Guided Studies Planning 090
Guided Studies Planning 091.

Since no criterion measures were immediately available by which to estimate the effectiveness of these courses of instruction, the students enrollment in and subsequent educational achievement in related courses was substituted as a criterion measure. These procedures will be described in detail for each course.

Guided Studies Reading 090

422 students were selected as the "sample" for purposes of examining GSR 090. This consisted of all students (1) taking or (2) who had previously taken GSR 090 and were still active during the fall semester, 1967, who had A.C.T. scores on their records. The actual information was not collected until the fall semester grades had been posted. The sample then consists of all students who were active during the fall semester, had been enrolled for GSR 090, and had furnished A.C.T. scores. Since according to the October 17 enrollment summary 420 students were enrolled during the fall semester of 1967 in GSR 090, this means that only 2 students who had taken GSR 090 in previous semesters (1966-1967 academic year) were still actively enrolled at the college during the fall semester.

Table 1 indicates that only 99 of the 422 students had also enrolled in English 101. 23 of these students were either concurrently enrolled in English 101 during the fall semester of 1967 or had taken English 101 during an earlier semester. Only 56 of the students enrolled in English 101 during the spring, 1968 semester, after having had GSR 090. Similarly, only 36 students were enrolled in Communications 131, 12 of these during the fall, 1967, semester or earlier. Only 24 students enrolled in Communications 131 after having had GSR 090.

The relatively low grade point averages for those who had completed English 101 and Communications 131 can be explained by the phenomenon of students performing poorly during initial enrollments and then being advised to enroll for Guided Studies Reading 090. At the time the data were collected grades were not available for the spring semester of 1968.

The relative effectiveness of the four A.C.T. sub-scales (English, Math, Natural Science, Social) and the grade received in Guided Studies Reading 090 as predictors of enrollment in English 101 and Communications 131 was examined by the use of multiple linear regression equations. The binary criterion vector indicating enrollment in one of the courses was estimated from the five vectors indicating A.C.T. scores and GSR 090 grades. (A=4) This was considered the full model. A restricted model, omitting the vector for GSR 090, was also computed. Comparison of the multiple correlation coefficients indicated the extent to which students who enroll or do not enroll in one of the given courses can be discriminated by examination of their GSR 090 grades. The results of this are indicated in Table 2. Although the obtained multiple correlation coefficients are statistically significant, the absolute values are relatively low, especially for Communications 131. This is to be expected since such small proportions of the students in the sample took English 101 and Communications 131. The grade earned in GSR 090, however, makes a significant contribution to the prediction equation only for English 101.

It must be remembered in all of these analyses that differences in A.C.T. scores which might exist between the groups being compared (students who enrolled or did not enroll in English 101, for example) have been controlled statistically. This permits us to make statements such as: the analysis indicates that for students with the same A.C.T. scores, those with higher grades in GSR 090 are less likely to enroll in English 101 whereas those with lower grades are more likely to enroll.

Guided Studies Writing 090

387 students were selected who had taken Guided Studies Writing 090. The method of selection was the same as that for those students who took GSR 090. The data in Table 3 indicates that only 36 students subsequently enrolled in English 101 during the spring, 1968 semester. 85 students had taken English 101 before the spring semester. Similarly 48 students subsequently enrolled in Communications 131, whereas 23 took the course before Spring, 1968. On the October 17 enrollment report 369 students were shown as enrolled in GSW 090. This means that only 18 students who had taken GSW 090 before the fall semester, 1967, were still actively enrolled during that semester.

When the effectiveness of GSW 090 grades as predictors of enrollment in English 101 and Communications 131 is examined, the results in Table 4 are more confusing than those reported in Table 2. The total predictions are statistically significant and the independent effect of GSW 090 grades, statistically controlling for A.C.T. score differences, is statistically significant. The stronger relationships occur with English 101. A negative relationship is indicated for GSW 090, in that students who earn higher grades are evidently less likely to enroll in English 101 and Communications 131. This is probably

an artifact due to the relatively large proportion of students who took the courses concurrently or before taking GSW 090. One may extrapolate that grades in GSW 090 probably do not have any functional relationship with the probability with which students enroll in English 101 and Communications 131.

Another possible explanation for the relatively low and negative relationships is that GSR 090 and GSW 090 function to some extent as service or supplementary courses. Since the A.C.T. scores for students who take these courses are definitely lower than average for the college these courses evidently serve a remedial function as opposed to a deficiency removal function. It is also probable that other factors, working in combination, are primarily responsible for the low continuation rates for students who were selected in the samples.

Guided Studies Planning 090

As with other courses examined in this report a sample of students who are taking GSP 090 during the fall semester, 1967, or who had previously taken GSP 090 and were still actively enrolled in the college, was selected. The October 17 enrollment report indicates that 281 of the 304 students thus selected were enrolled during the fall semester. This would indicate that only 23 students who had taken GSP 090 during the 1966-1967 academic year were still actively enrolled during the fall semester of 1967.

In Table 5 the number and percent of students who subsequently had enrolled in English 101, Communications 131, and Social Science 131 (this includes spring enrollments for those who took GSP 090 in the fall semester of 1967.) are tabulated. Similar statistics are presented for those who passed these courses. It must be remembered, however, that the percentages indicated in the table are based on the current sample size of 304. If percentages are recalculated, using as 100% the 23 students who had completed GSP 090 before the fall semester of 1967 but who were still actively enrolled, the recomputed percentage would be 39% for "Passed English 101," 35% for "Passed Communications 131," and 26% for "Passed Social Science 131." These figures are also somewhat misleading since they are based only on the few students still actively enrolled in the fall semester, 1967.

Multiple regression equations attempting to predict enrollment in English 101, Communications 131, and Social Science 131, indicated no functional relationships existed between grades earned in GSP 090 and the probability of enrollment or successful completion of the courses. Therefore, the results of these analyses are not tabulated. The data in Table 7 are discussed in a later section.

Guided Studies Planning 091

A sample of 292 students who had taken or were taking during the fall semester, 1967, Guided Studies 091 was selected. Of these, 274 were enrolled, as of

October 17, in GSP 091. This indicates that only 18 students were still active during the fall, 1967, who had taken GSP 091 previous to that semester. The figures in Table 6 indicate the number and percentage, based on the sample of 292, of those who subsequently enrolled in the three "criterion" courses (this includes spring enrollments for those who were taking GSP 091 during the fall semester.) and those who successfully completed the three courses.

The mean scores on the A.C.T. sub-scales are somewhat higher for this sample, as opposed to the GSP 090 sample. Since students are directed into this course as a result of having earned an inadequate grade point average, not on the basis of initial A.C.T. composite score as is the case for GSP 090, this is not surprising. The standard deviations on the four sub-scales, although not tabulated, were all approximately 8.

As with GSP 090, no functional relationships exist between probabilities for enrolling in or successfully completing the three criterion courses and grades earned in GSP 091, for students with the same A.C.T. scores. Therefore, these results are not tabulated.

Table 7 indicates that grades earned in GSP 090 and 091 have significant and positive relationships with grade point averages for other courses, when ability level differences are controlled using A.C.T. scores. The figures indicate that, for example, a student who earns an A in a GSP course will, on the average, have a GPA approximately one-fourth of a letter grade higher than a student who earns a B in a GSP course, if they are of equal ability.

Guided Studies Math 090 and 091

Tables 8 and 9 indicate the subsequent enrollment of students who took GSM 090 and 091. The samples were selected as before. The October 17, 1967, enrollment report indicated 301 students taking GSM 090 and 132 students taking GSM 091. Therefore, only 19 students who had taken GSM 090 before the fall, 1967, semester were still actively enrolled. Only 30 students who had taken GSM 091 before fall, 1967, were still actively enrolled.

Grades earned in GSM 090 and 091 are related significantly to grades subsequently earned in Math 101 but not Math 102, 115, or GSM 093. Due to the small proportion of students involved, and the computational "juggling" necessitated, the results are not tabled. It was estimated, however, that one letter grade difference in a GSM grade was associated with a 1/10 letter grade change in Math 101.

SUMMARY

Few definite conclusions can be drawn from this study since there are problems concerning the criterion measures. The data do not permit an exact presentation

to be made of the subsequent educational achievement of students taking the Guided Studies courses at different points in time, e.g., at the end of one semester, two semesters, etc. Also, one would expect the results to differ depending upon whether the sample being examined took the Guided Studies course during the fall or spring semester, since the nature of the students in the college and the subsequent availability of courses is not the same.

The goals of these courses should be more specifically defined and an evaluation made in terms of these goals.

Since the criteria for placing students in some of these courses, especially the Guided Studies Planning courses, were arbitrarily selected, there is no real evidence to indicate the validity of these criteria. Also, the system prohibits the collection of such data. For example, there is no way to examine the relative effectiveness of GSP 090 (even if the criterion was more specific) for students with A.C.T. composite scores of 13, since no students with the score of 13 would take GSP 090. Similarly, the effectiveness of GSP 090 for students with an A.C.T. of 10 cannot be examined, since all such students would normally be enrolled in GSP 090.

The three "criterion" courses, English 101, Communications 131, and Social Science 131, were selected since at least one of them is basic to a large number of the programs offered by the college. It is true that enrollment in and completion of these courses emphasizes academic, verbal abilities. This probably makes the selection of these courses a more appropriate criterion for GSR and GSW. They are probably least appropriate for GSP courses, especially GSP 090. In the absence of more specific definitions of goals for guided studies courses, whether in terms of subsequent educational achievement or scores on tests specifically constructed for the guided studies courses, more appropriate criterion measures can hardly be selected.

In terms of the guided studies courses performing some sort of salvage function, by permitting students with deficiencies or other types of problems to eventually qualify for and successfully complete an appropriate program, further examination is needed. If it is assumed that at least one of the criterion courses is basic to nearly all of the programs available for students, the salvage rate appears to be somewhat low.

It is recommended that all of these studies should be replicated with samples selected so that results for different semesters and at different points in time after a given semester can be isolated.

Table 1

Sample of Students Who Took GSR 090

	Took GSR 090 Fall	Enrolled in English 101		Enrolled in Communications 131
Number	422	before spring spring	99 56	36 24
Percent	100.00	before spring spring	23.46 13.27	8.53 5.69
Mean Grade A=4	2.42		1.18 (N=99)	1.58 (N=36)

Mean ACT

English	8.55
Math	8.64
Social Science	8.00
Natural Science	9.81

Table 2

Prediction of Enrollment in
English 101 and Communications 131
from GSR 090 Grades and ACT Scores

	Criterion	
	English 101	Communications 131
Full model R^2	.0542	.0050
Regression Coefficients		
ACT English	+.0001	+.0013
ACT Math	+.0050	-.0001
ACT Social Science	+.0070	+.0010
ACT Natural Science	-.0020	-.0040
GSR 090 Grade	+.0974	+.0090
Regression Constant	-.0819	+.0851
Restricted model R^2	.0185	.0043
F ratio	15.73	.29
degrees of freedom	1/416	1/416
probability	$<.01$	$<.50$

Table 3

Sample of Students Who Took GSW 090

	Took GSW 090 Fall		Enrolled in English 101	Enrolled in Communications 131
Number	387	before spring	85	23
		spring	36	48
Percent	100.00	before spring	21.96	5.94
		spring	9.30	12.40
Mean Grade	2.33		1.02 (N=85)	1.52 (N=23)

Mean ACT

English	8.66
Math	9.06
Social Science	8.47
Natural Science	10.31

Table 4

Prediction of Enrollment in
English 101 and Communications 131
from GSW 090 Grades and ACT Scores

	Criterion	
	English 101	Communications 131
Full model R^2	.0665	.0628
Regression Coefficients		
ACT English	+.0031	-.0019
ACT Math	+.0017	.0006
ACT Social Science	+.0087	.0000
ACT Natural Science	-.0066	-.0047
GSW 090 Grade	-.1048	-.0489
Regression constant	.4155	.2332
Restricted model R^2	.0144	.0280
F ratio	21.20	14.20
degrees of freedom	381	381
probability	$<.001$	$<.01$

TABLE 5

Sample of Students Who Took GSP 090

	Number	Percent
Took GSP 090	304	100

Subsequently took:

English 101	26	55
Communications 131	15	3
Social Science 131	12	3.95

Passed:

English 101	9	2.96
Communications 131	8	2.63
Social Science 131	6	1.97

Mean ACT Score:

English	9.07
Math	9.27
Social Science	8.50
Natural Science	10.35

TABLE 6

Sample of Students Who Took GSP 091

	Number	Percent
Took GSP 091	292	100

Subsequently took:

English 101	15	5.14
Communications 131	6	2.05
Social Science 131	8	2.74

Passed:

English 101	4	1.37
Communications 131	4	1.37
Social Science 131	5	1.71

Mean ACT Score:

English	11.99
Math	12.29
Social Science	12.84
Natural Science	13.20

Table 7

Prediction of GPA* from ACT Scores
and GSP 090 and GSP 091 Grades

		Prediction Using GSP 090	Prediction Using GSP 091
Full Model R^2		.1609	.1336
Coefficients	ACT English	+.0169	-.0092
	ACT Math	-.0008	-.0050
	ACT Social Science	-.0208	+.0219
	ACT Natural Science	+.0224	-.0023
	GSP	+.2886	--
	grade	--	+.2762
Constant		+1.1169	+.8303
Restricted Model R^2		.0537	.0195
	F ratio	38.07	37.67
	Degrees of freedom	1/298	1/286
	Probability	<.001	<.001

*Grade point average does not include grade earned in GSP courses.

Table 8

Sample of Students Who Took GSM 090

	Number	Percent	Mean Grade (A= 4)
Took GSM 090	320	100.00	
Subsequently Took:			
GSM 093	18	5.62	1.83
Math 101	20	6.25	1.25
Math 102	2	.62	0.00
Math 115	0	0.00	--

Table 9

Sample of Students Who Took GSM 091

	Number	Percent	Mean Grade (A=4)
Took GSM 091	162	100.00	1.91
Subsequently Took:			
GSM 093	16	9.88	2.06
Math 101	18	11.11	1.44
Math 102	1	.62	4.00
Math 115	5	3.09	.80